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U.S. Department  
of Transportation  
  
**Research and  
Special Programs  
Administration**

John A. Volpe  
National Transportation  
Systems Center

Kendall Square  
Cambridge, Massachusetts 02142

June 12, 2002

Mr. Paul Peronard  
On-Scene Coordinator  
Environmental Protection Agency  
999 18<sup>th</sup> Street, Suite 500, 8EPR-ER  
Denver, CO 80202-2466

**Subject: Landfill Cell Design Approach, Screening Facility Removal Action Work Plan Addendum, and Response to Parker's Agricultural Fill Letter**

Dear Mr. Peronard,

Enclosed are the Landfill Cell Design Approach, Screening Facility Removal Action Work Plan Addendum, and Response to Parker's Agricultural Fill Letter for your files.

The Volpe Center is in the process of developing an 80% Landfill Cell Design for your review and comments. We anticipate the 80% design will be complete on June 21, 2002. We will provide you with the 80% design deliverable for your comments at that time. You may utilize this design for an RFP to your removal contractor. Enclosed is the design approach we are taking for the Class IV Landfill Cell at the Lincoln County Landfill.

The Screening Facility Removal Action Work Plan Addendum was emailed to you on June 10, 2002. Enclosed is a hard copy for your files. This addendum is to be used in conjunction with the Final Screening Facility Removal Action Work Plan, dated August 14, 2001, and the Site Restoration Plans, Revision 7, signed by Mel Parker on May 16, 2002.

Our response to Mel Parker's letter regarding his understanding of the agricultural soil was faxed to you on June 11, 2002. Enclosed is a hard copy for your files. The purpose of this letter was to indicate our conditional acceptance of Mel's letter and explain why understanding differed.

We appreciate the opportunity to assist you in this and future Libby Asbestos Project efforts. Should you have any questions or comments on the enclosed documents, please do not hesitate to call me at (617) 494-2574.

Sincerely,

John McGuiggin, PE  
Project Manager

Enclosures (3)

cc: Duc Nguyen/EPA  
EPA Storefront/Libby, MT  
File/Landfill Cell Design  
File/Screening Plant Restoration



## Memorandum

**To:** Peter J. Borowiec, Jr., P.E., CDM  
Demetrios Klerides, P.E., CDM

**From:** Randal L. Huffsmith, P.E.  
Jeanne M. Riley, P.E.

**Date:** May 2, 2002

**Subject:** Proposed Class IV Landfill Construction and Operational Plan  
Memorandum One, Lincoln County Landfill, Libby, Montana

This memo describes a construction sequencing and operational approach for the proposed Lincoln County Class IV landfill. The landfill is currently in the design phase. The plan consists of the phased excavation and filling of individual trenched cells within the proposed landfill footprint. This approach incorporates Lincoln County's comment on the Draft Conceptual Landfill Cell Design Report (CDM, January 25, 2001) and Proposed Class IV Landfill Construction and Operational Plan Draft Memorandum One (CDM, April 22, 2002). At the County's request, the Class IV Cell will be designed with a cross section 20 feet below the existing grade, rather than the conceptual design consisting of excavation to ten feet below grade with a ten-foot berm above grade. The approach also includes the requested "Phased Construction" Plan, in which EPA can begin disposing of asbestos containing materials from the residential removals program prior to construction of the entire landfill.

### Plan Overview

After the landfill site has been prepared, individual trenched cells will be excavated. A trenched cell will be excavated west to east along the north end of the landfill site. Each truck that arrives to dump waste materials will back up to the cell and dump the load. Using an excavator bucket, an operator will adjust the position of the waste within the cell and compact the materials. At the end of each day, six inches of daily cover will be placed on top of the waste materials. Once the trenched cell is approximately 75 percent full, the next trenched cell will be excavated, separated from the first cell by a berm. This construction/operations plan was designed using the following assumptions:

- Waste materials to be disposed of in the Lincoln County Class IV landfill will be bagged vermiculite asbestos, bulk vermiculite asbestos, asbestos containing soils, and general asbestos-contaminated debris generated from EPA's emergency response actions and residential removals program;
- The waste material will be delivered to the Class IV landfill in end dump trucks, vacuum trucks, or roll off boxes;
- The approximate total asbestos waste material is 150,000 cy. This figure is based on an estimated volume of 100,000 cy (based on information from the EPA's removal project) plus a 20 percent contingency for future disposal needs, plus an allowance of 25 percent for daily cover soil and berms between cells;
- The Government's removal Contractor will have an excavator (capable of an excavation depth of 20 feet and a reach of 30 feet) and operator onsite available for the excavation of landfill cells, adjustment and compaction of waste materials, and placement of daily cover material; and
- Although the Class IV landfill will be open to accept asbestos waste materials year-round, landfill operations will slow during the winter months.

## Landfill Construction and Operation

Several elements of the landfill design will be constructed before the landfill can begin accepting waste. The new weigh station, haul road, and stockpile area (for the storage of cleared topsoil and excavated soils from the cells) will be constructed, as well as the decontamination (decon) pad. As the haul trucks will not drive over the asbestos waste in the landfill, decon of truck wheels will not be required; however, the decon pad will be necessary for the cleaning of truck beds and rollovers, as well as construction equipment used during operation. All fencing and signage, and erosion and stormwater control features will be in place prior to the acceptance of waste materials to the landfill. These items will be provided as part of the design documents. Once the landfill is in operation, all work will be performed in modified Level C personal protective equipment (PPE). Only OSHA Hazwoper trained personnel will be permitted within the active disposal area of the landfill.

The details of the proposed landfill construction, specifically related to the sequencing of the landfill cells, are shown on the attached figures. Figure 1 depicts a plan view and location of the proposed Class IV landfill. The proposed landfill footprint is approximately 540 feet wide by 840 feet long (approximately 10.4 acres) and 20 feet deep. Site preparation will consist of clearing an area of the landfill footprint to two feet below grade, as shown in Figure 2.

Initially, only the required area for one-year's worth of waste material, an area of 540 feet by 200 feet, will be cleared. According to the requirements of the Administrative Rules of Montana (ARM) 17.50.530 Section 3, the final cover system must be designed with a minimum eighteen-inch soil infiltration layer (permeability no greater than  $1 \times 10^{-5}$  cm/sec) and a minimum six-inch seed bed layer capable of sustaining native plant growth, protecting the infiltration layer from frost effects, and rooting damage. If the geotechnical investigation results indicate that the two-feet of cleared material is suitable for use in the final cover system, the soils will be stockpiled for this purpose. If the soils do not meet the requirements for the final cover material, the removed soils will be stockpiled and used as daily cover, and another borrow source will be identified for final cover material. The stockpile area will be located in the approximately two-acre cleared parcel of land between the existing Lincoln County Class II landfill and the proposed Class IV landfill.

Once the site has been cleared and a two-foot depth of soil removed, the first year of landfill cells will be staked out. Then, the first trenched cell will be excavated, soil required for daily cover use will be stockpiled adjacent to the cell, the remaining soil stockpiled at the storage area, and the Class IV landfill can begin accepting asbestos containing waste materials. The layout and sequencing of the excavation of the landfill cells are depicted in Figure 3.

The typical dimensions of each cell will be 54 feet wide, 540 feet long, and 20 feet deep (18 feet of waste material and 2 feet of final cover). A plan view of a typical cell is shown in Figure 4. Two cross sections are also included on Figure 4: west-east (A'-A) and north-south (B'-B). As shown on the Figure 4 cross sections, the sides of the cells will be excavated at a 1:1 slope. The slopes of the north and south cell sidewalls may be reduced based on the results of the geotechnical investigation. The landfill footprint naturally slopes to the southeast, therefore the bottom of the cells will be slightly sloped to the southeast, which will allow for the collection of rainwater. Significant accumulations of water will be pumped, if necessary.

The excavator and haul trucks will not enter the cells. The haul trucks will access the cell to dump their load at the south side of the cells. Water will be applied to the waste during dumping of the load if necessary to control dust and other particulate matter. From the ground surface, the excavator will adjust the position of the waste in the cell to keep lifts uniform (working from either the north or south side of the trench) and compact the waste with the bucket. A minimum of once per day, the excavator will be used to apply a six-inch layer of daily cover soil (obtained from the soil stockpile located adjacent to the trenched cell) over the waste materials. According to the County, excavation, while more difficult than in the summer, is feasible during the winter months in Libby. However, soil stockpiles generally freeze. Several borrow areas on the Lincoln County property are available for daily cover soil use if the stockpiles are not available.

Native soil berms will remain in place between each trenched cell to prevent the exposure of waste materials when excavating the adjacent cell. The berms will be approximately ten-feet wide between the cells. The cells will be excavated and filled starting at the west side and moving to the east. When one cell is approximately 75 percent completed, a new cell will be started, continuing north to south. Within the 540-foot by 840-foot landfill footprint, thirteen trenched cells can be utilized.

The total volume of waste material used for this design is 150,000 cy. Assuming the removal actions will generate asbestos material for five years, approximately 30,000 cy per year will be disposed of in the landfill. The asbestos removal program is planned for six days per week, twelve months per year. Therefore, approximately 100 cy of asbestos waste material (including daily cover) will be disposed of in the landfill per day.

The volume of each cell is approximately 12,600 cy. The required capacity for the first year of asbestos waste disposal is three cells (30,000 cy/12,600 cy). Therefore, an area of 540 feet by 200 feet, space for three cells, will be prepared for the first year of operation. The total landfill capacity is 163,800 cy (13 cells X 12,600 cy/cell). This capacity is greater than the anticipated asbestos waste generated from the removal actions (150,000 cy).

## Summary

The phased cell design and landfill operation plan provides several advantages over traditional open excavation, filling, and daily cover placement. The phased approach allows the Lincoln County Landfill to begin accepting asbestos waste relatively soon following the onset of construction, rather than waiting for the excavation of the entire landfill cell. The proposed operation plan also offers flexibility with regard to closure. Once the residential asbestos removal program is completed, landfill operation can cease immediately, and proceed directly into the closure phase. The landfill cover system can be installed over only the cells used, potentially reducing the size of the Class IV landfill footprint and leaving additional unused capacity for Lincoln County use.

Phased construction and operation will reduce exposure to asbestos materials, both for the haul truck drivers and landfill operators. Driving over the waste materials will not be required, thus eliminating the need to decontaminate each truck's wheels, and eliminating any safety concern associated with driving over construction/demolition materials. Traditional bulldozing to move and compact the waste and apply daily cover would cause the vermiculite bags to burst, increasing the exposure for the drivers and operators and increasing the risk of asbestos particles becoming airborne. On windy days, operation of the landfill would not be possible using traditional open excavation/dozing techniques. However, using this proposed approach, the waste material will be dumped directly into each cell, with water applied via water truck if necessary. The asbestos waste materials will be compacted and covered with an excavator, and bull dozing will not be required.

Peter J. Borowiec, P.E.  
Demetrios Klerides, P.E.  
May 2, 2002  
Page 5

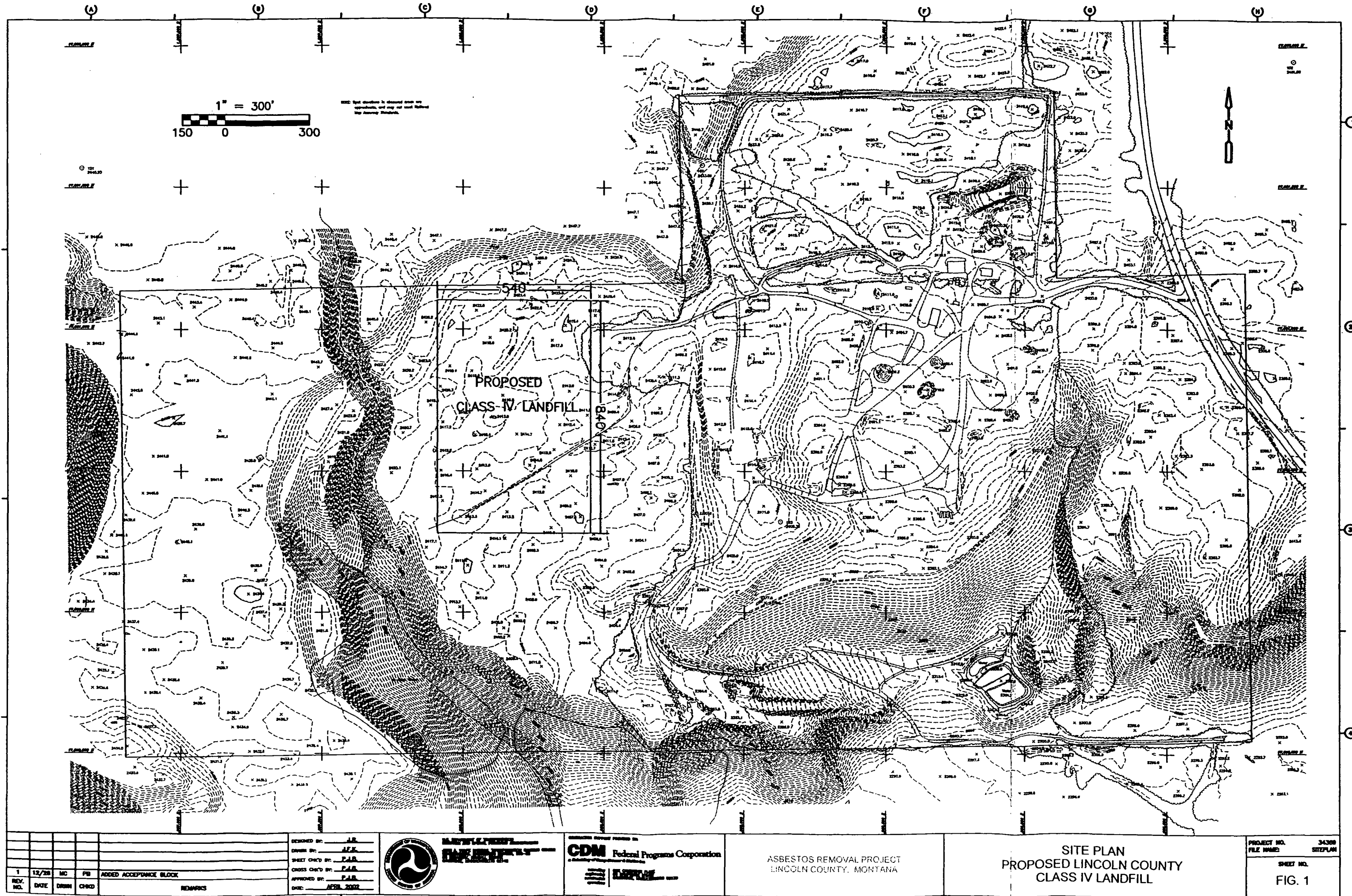
Please review this plan and attached drawings and provide comments so that we may continue to proceed with subsequent design drawing and specification tasks.

cc: John Kotson, CDM  
Karin Mainzhausen, CDM  
Dave Swanson, CDM  
Paul Peronard, EPA  
John McGuiggin, Volpe  
Julie Borgesi, Volpe

**Attachments:**

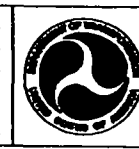
Figure 1 Site Plan  
Figure 2 Site Preparation  
Figure 3 Landfill Construction and Sequencing  
Figure 4 Typical Landfill Cell - Plan View and Cross Sections

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REV.	DATE	DRWN	CHKD	REMARKS
1	12/28	MC	PS	ADDED ACCEPTANCE BLOCK

DESIGNED BY: JLB  
DRAWN BY: JLB  
CHECKED BY: JLB  
APPROVED BY: JLB  
DATE: APR 2002



ENVIRONMENTAL  
ENGINEERING  
CONSULTANTS

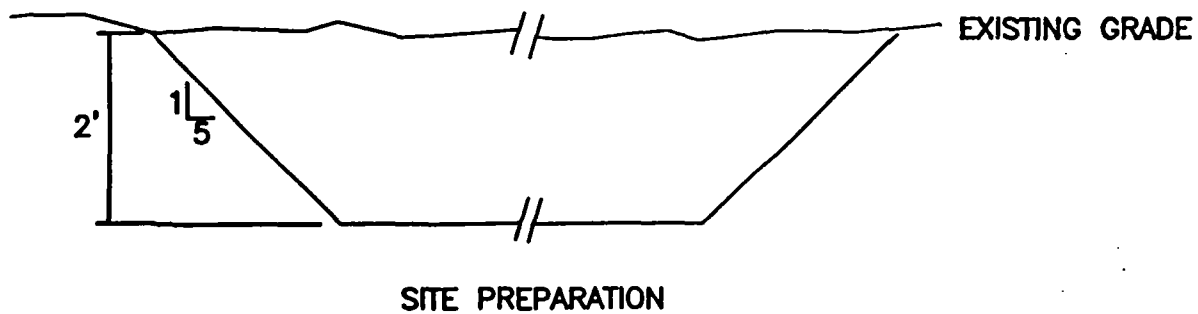
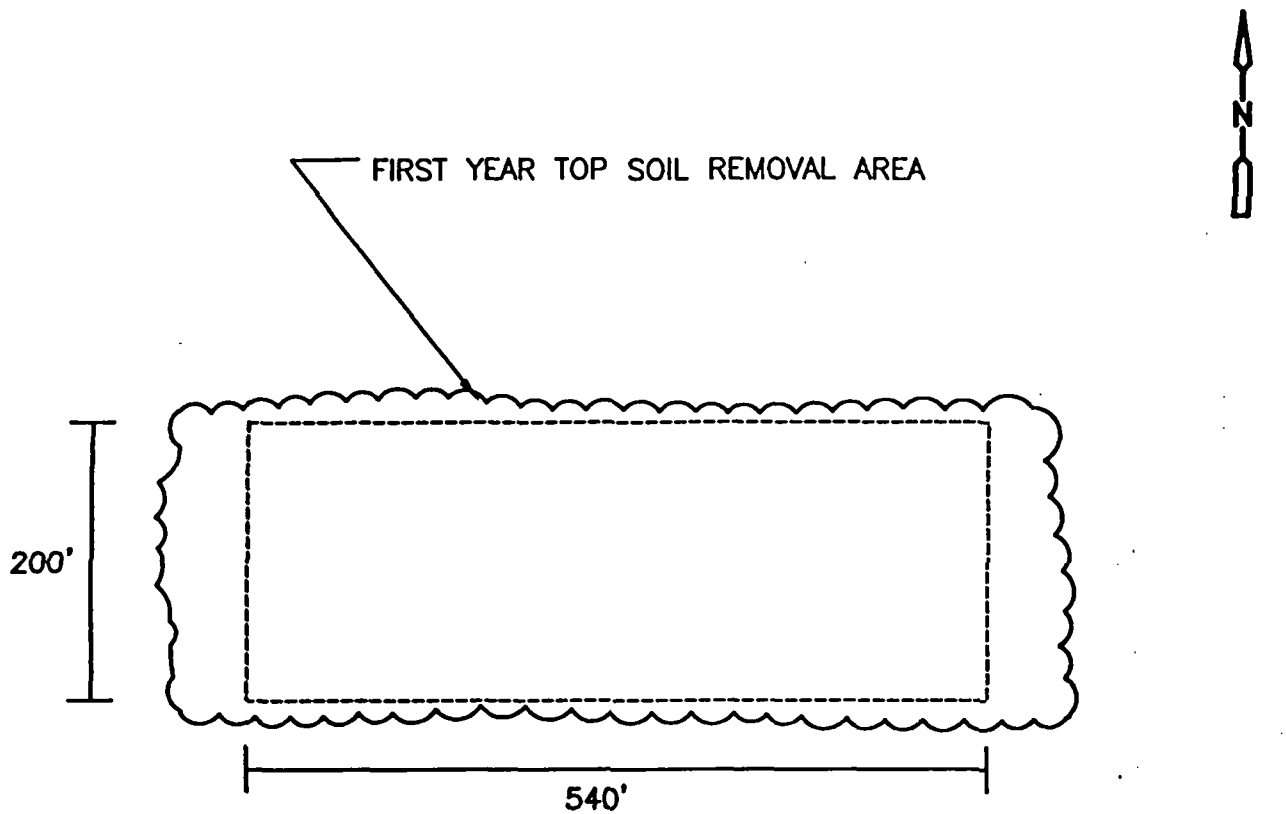
CDM Federal Programs Corporation  
A subsidiary of CDM

ASBESTOS REMOVAL PROJECT  
LINCOLN COUNTY, MONTANA

SITE PLAN  
PROPOSED LINCOLN COUNTY  
CLASS IV LANDFILL

PROJECT NO. 34389  
FILE NAME: SITEPLAN  
SHEET NO. FIG. 1

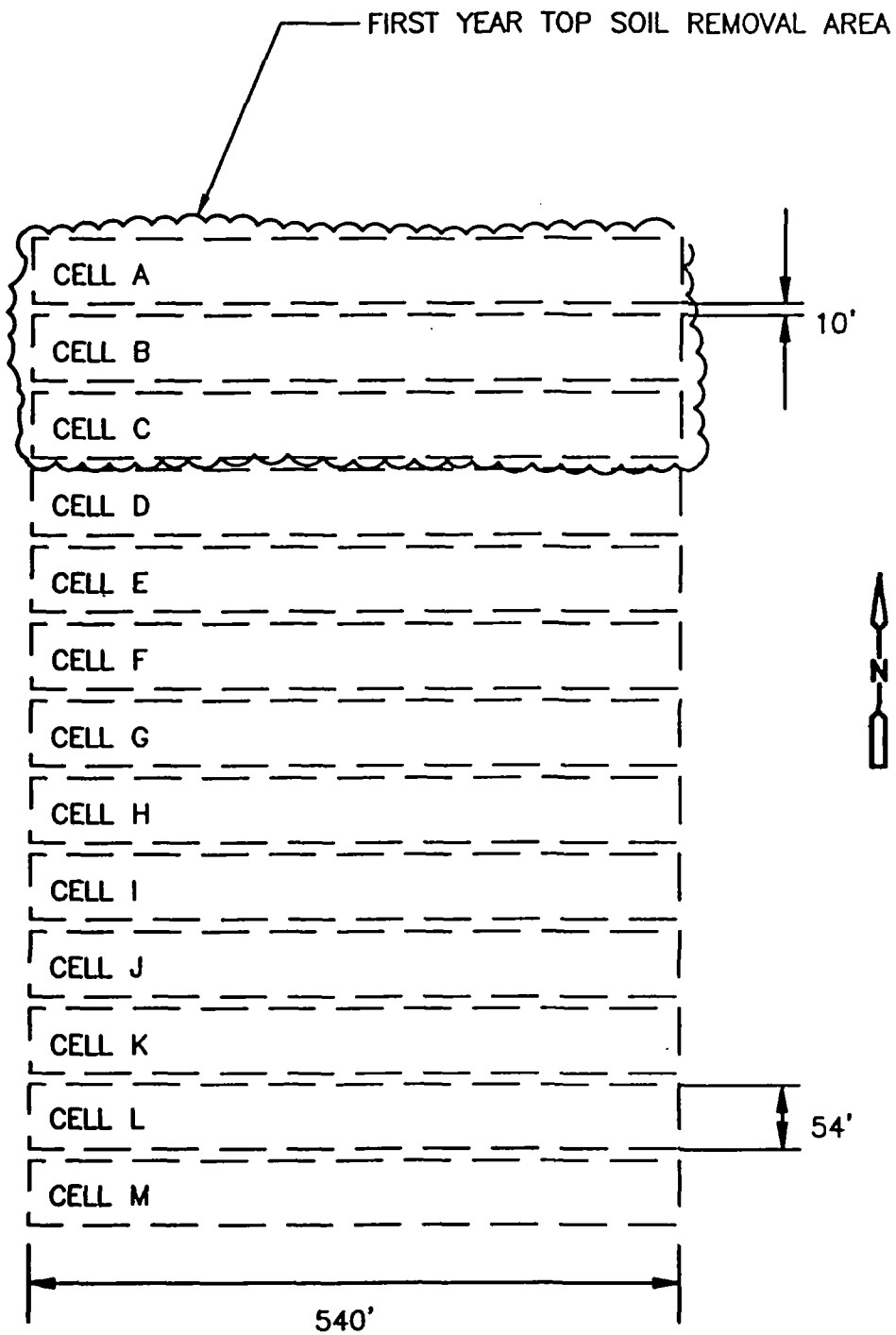


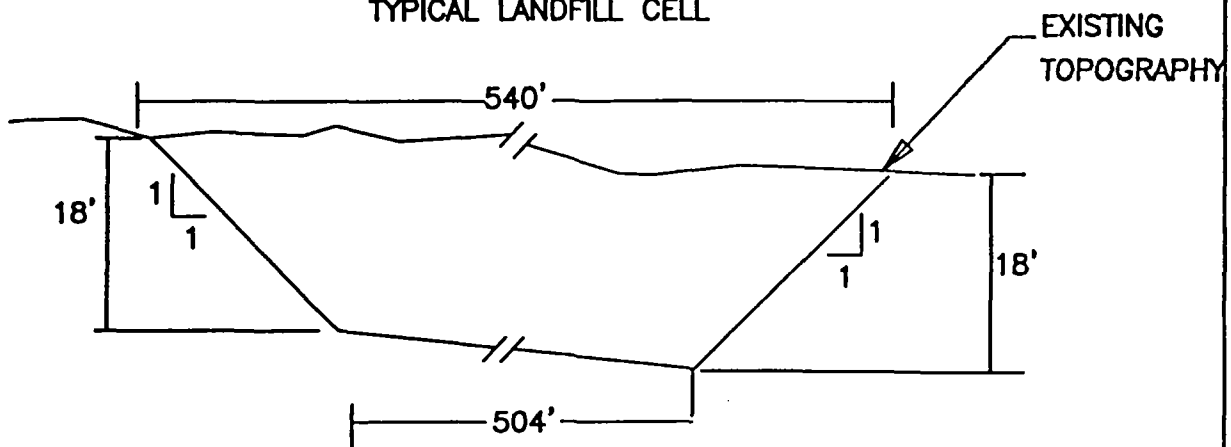
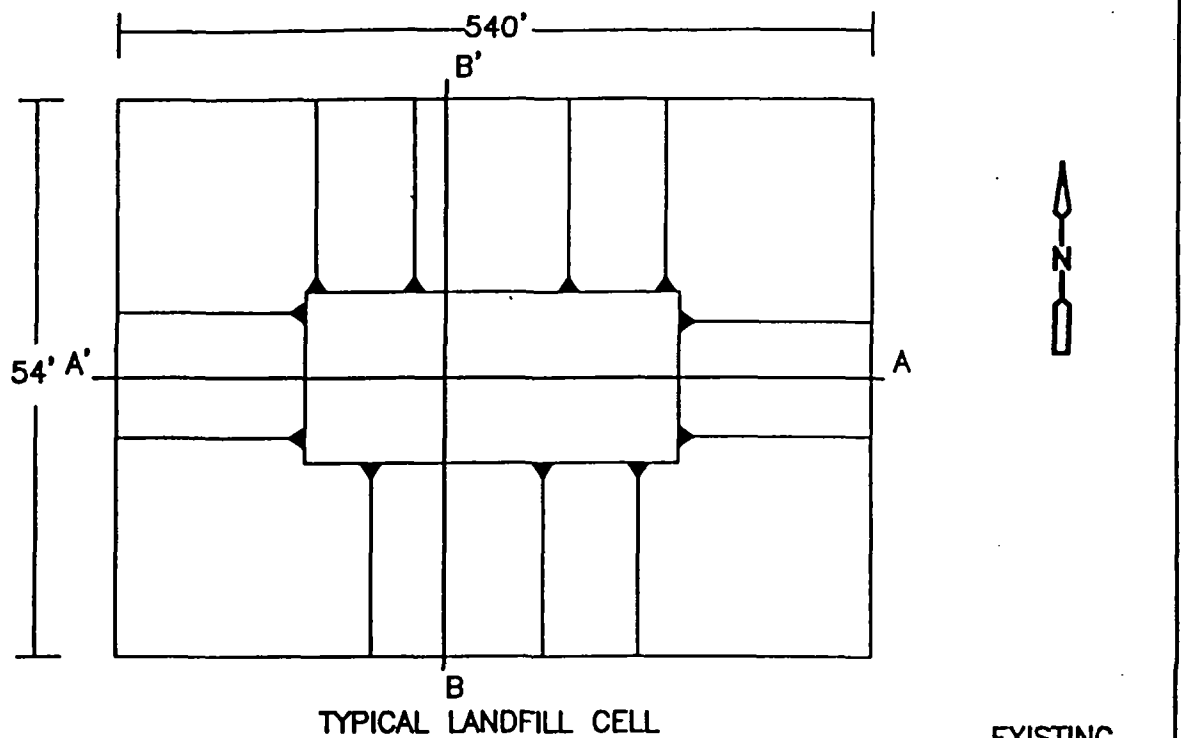


NOTE: REMOVE 2 FEET OF SOIL ACROSS EXCAVATION AREA AND  
STOCKPILE EXCAVATED SOIL IN AN ADJACENT LOCATION  
APPROVED BY COUNTY AND GOVERNMENT

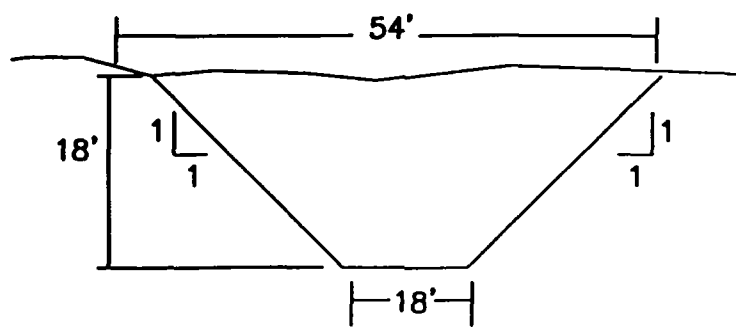
NOT TO SCALE

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SECTION A-A'  
EXISTING TOPOGRAPHY PROVIDES A NATURAL SLOPE IN THE WEST TO EAST DIRECTION



SECTION B-B'

NOT TO SCALE

# **Screening Facility Removal Action Work Plan Addendum**

## **June 5, 2002**

### **Section 2A - Summary of Work Completed in 2001 – (New for the Addendum)**

As an addendum to the Screening Facility, Final Removal Action Work Plan, August 14, 2001, the following is a brief summary of work completed in 2001. Demolition and removal activities were completed, including demolition of remaining contaminated structures, removal of stockpiled soil, and excavation of contaminated soil. All trees and vegetation on the Rainy Creek banks were removed and disposed at the abandoned mine site. Asbestos containing soils along the Rainy Creek north bank were removed and disposed at the abandoned mine site. Soils along Rainy Creek south bank were excavated to a depth of 18 inches below existing ground surface and disposed at the abandoned mine site. The existing creek bottom remained unexcavated. The Rainy Creek bottom was not to be disturbed. However, it appears that when the mature trees along with their root system were removed from the creek banks, the bottom may have been disturbed. Asbestos containing soils from the Kootenai River bank were excavated and disposed at the abandoned mine site. Restoration of Rainy Creek and the Kootenai River bank will be addressed under a separate design.

Final restoration activities began, including the import and backfill of agricultural and structural fill materials, starting road construction and placement of riprap along the banks of Rainy Creek and the Kootenai River. Percolation tests were performed for each proposed dwelling; in each pressure dose leaching area and each replacement leaching area. One test passed and one test failed. Percolation test results were provided to the Lincoln County Board of Health to verify estimated size of leaching areas. Once the soils are removed and replaced in the failed area, it will need to be re-perced. Soils that did not meet percolation requirements will be excavated and replaced as shown on sheet C-14B of the site restoration drawings. Remaining restoration activities will be continued in the 2002 construction season.

### **Section 3A - Work Planned for 2002 – (New for the Addendum)**

#### **A.3.1 Planning Activities**

##### **A3.1.1 Introduction**

The Engineering Drawings and Technical Specifications developed in 2000 for the removal activities started in 2000 at Operable Unit 02 will remain in effect for 2002. Note that these restoration drawings were revised several times in 2000 and 2001 as required, and that the latest revisions approved by Melvin and Lerah Parker will be used for 2002.

##### **A.3.1.2 Prepare Health and Safety Plan Requirements**

Health and Safety Requirements will be in accordance with the comprehensive site Health and Safety Plan developed and implemented in 2001. Health and Safety Plan Requirements as

outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001 will also remain in effect for 2002.

### **A.3.1.3 Prepare Air Monitoring Requirements**

#### **A.3.1.3.1 Perimeter and Ambient Air Monitoring**

Background ambient air samples, ambient air samples during the final restoration activities, and final clearance ambient air samples will be collected at fixed perimeter monitoring sites between the Flyway and Screening Facility properties. Ambient and perimeter air sampling may also need to be conducted while ripping up soils south of Rainy Creek. The number and location of these additional fixed perimeter samples will be determined by PES in cooperation with EPA and the Volpe Center. The actual locations will be selected in the field and surveyed using a resource-grade GPS instrument.

#### **A.3.1.3.2 Personal Air Monitoring**

Personal air monitoring for backfilling operations, Rainy Creek test pits and reconstruction, creek bridges, fishing dock, riverbank stairs, irrigation system piping, water pipe, electrical conduits, septic tanks, etc. is not anticipated for the 2002 season. It is possible that some personal air sampling may want to be conducted when ripping up the soils south of Rainy Creek.

#### **A.3.1.3.3 Sample Identification**

Sample Identification will be conducted as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001.

#### **A.3.1.3.4 Sample Collection**

Sample Collection will be conducted as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001.

#### **A.3.1.3.5 Sample Custody, Documentation, Packaging, and Shipping**

Sample Custody, Documentation, Packaging, and Shipping will be conducted as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001 for samples collected in 2002.

#### **A.3.1.3.6 Sample Archiving**

Sample Archiving will follow the process outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001. Soil samples analyzed in EMSL's mobile lab and fixed base lab in 2001 were archived as described in 3.1.3.6 of the 2001 work plan. EMSL will follow the same archiving process in 2002. Soil samples analyzed by Reservoirs Environmental Services, Inc. in 2001 in their Denver, CO facility were archived there.

Reservoirs will follow the same archiving process in 2002. Also, Hygeia and Batta (new labs) are expected to receive samples from the 2001 backlog for analysis and archiving in the same manner as EMSL and Reservoirs. Any questions concerning soil sample archiving should be addressed to Anni Autio in Cambridge or in her absence, Tod Burgessor in Denver.

#### **A.3.1.3.7 Equipment Decontamination**

Equipment Decontamination will follow the process outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001.

#### **A.3.1.3.8 Health and Safety**

All sampling will be performed in 2002 as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001.

#### **A.3.1.4 Sampling and Quality Assurance Project Plan**

The text portion of the Sampling and Quality Assurance Project Plan developed by the EPA is provided in Appendix A of the Screening Facility, Final Removal Action Work Plan, August 14, 2001. Applicable requirements of this plan will be implemented during the activities conducted in 2002.

#### **A.3.1.5 Decontamination and Dust Suppression Requirements**

##### **A.3.1.5.1 Decontamination Requirements**

Unless additional contamination is encountered, (i.e., visual vermiculite is found) decontamination procedures as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001 are not necessary for proposed 2002 work.

##### **A.3.1.5.2 Personnel Decontamination**

Unless additional contamination is encountered, (i.e., visual vermiculite is found) personnel decontamination procedures as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001 are not required for proposed 2002 work.

##### **A.3.1.5.3 Decontamination of Construction Equipment**

Unless additional contamination is encountered, (i.e. visual vermiculite is found) decontamination of construction equipment as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001 is not required for proposed 2002 work.

##### **A.3.1.5.4 Decontamination of Remaining Structures**

Decontamination of remaining structures as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001 is not required for proposed 2002 work.

#### **A.3.1.5.5 Dust Suppression Procedures**

Dust suppression procedures as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001 will be conducted to minimize nuisance dust during 2002 restoration activities.

#### **A.3.1.6 Supplemental Soil Sampling**

Supplemental Soil Sampling as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001 is not anticipated for 2002 activities.

#### **A.3.1.7 Riverbank and Rainy Creek Excavation and Stabilization**

Test pits will be excavated along Rainy Creek to confirm keying in and depth of MT DOT Class II rip rap placed on the north creek bank in 2001. Rip rap placed along the south creek bank in 2001 will be removed and replaced with Class II rip rap. EPA has requested CDM/Volpe to evaluate Rainy Creek restoration and design stepped pools along the length of the creek. Revegetation above the rip rap will be as specified by the Government. Restoration of Rainy Creek will be addressed under separate design. Sediments in Rainy Creek may contain asbestos.

MT DOT Class II rip rap was placed to Elevation 2081 along the Kootenai River bank in 2001. Stone and timber stairs need to be constructed, river water extraction pumps and intake piping need to be installed in 2002. Revegetation above the rip rap will be as specified by CDM/Volpe. This will be done in conjunction with the Rainy Creek design and reconstruction. JRS Surveyors, Inc. (JRS) will locate the top of the riverbank, following contaminated soil removal and placement of rip rap.

#### **A.3.1.8 Final Site Restoration**

The site will be brought to final grades and restored as shown on the final site restoration drawings. Gravel roadways will be a minimum of 12 feet wide or as shown. Refer to the detail section on sheet C-16B. For gravel roadways, structural fill provided by the government will be placed in 12-inch lifts to a minimum depth of 1 foot below final roadway surface. Gravel roadway surface will consist of a minimum of 12 inches of crushed base course type "A", Grade 6 as specified in Table 701-8 of the Montana DOT Standard Specification for Road and Bridge Construction, 1995 Edition, as amended. Grade 6 Type A Base will be placed in 6-inch lifts. Test pits will be excavated to check the "rock content" of agricultural fill as discussed with EPA, Volpe, CDM and the property owners. A woven geotextile polypropylene will be placed between the structural fill and Grade 6 Type A Base course for gravel roadway construction. Geotextile fabric will extend the full width of all gravel roadways. Final restoration includes installing all of the above listed items and water pipe, testing/repairing existing well, installing buried electrical conduits, wire and appurtenances, installing irrigation system pumps, piping, control valves, flow meter and vault, perimeter fencing and gates, installing creek foot bridges, fishing dock, riverbank stairs,

culverts under gravel roadways, septic tanks, backfilling, topsoiling, hydroseeding, creek and riverbank revegetation and Rainy Creek bed reconstruction.

### **A.3.2 Removal/Restoration Activities**

#### **A.3.2.1 Contractor Mobilization**

Contractor mobilization as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001 will be duplicated for 2002. Each contractor will be responsible for setting up their own temporary facilities to use during the 2002 restoration activities, unless otherwise specified by the Government.

#### **A.3.2.2 Temporary Facilities**

Temporary facilities location will need to be coordinated with the Parker's and EPA for the 2002 work season.

#### **A.3.2.3 Decontamination Facilities**

Decontamination facilities located at the Screening Facility as outlined in the Final Removal Action Work Plan, August 14, 2001, will not be required for 2002 restoration activities.

#### **A.3.2.4 Dispose of Stockpiled Demolition Debris**

Disposal of stockpiled demolition debris as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001 was completed in 2001 and is not required for 2002.

#### **A.3.2.5 Dispose of Stockpiled Soil**

Disposal of stockpiled soil as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001 was completed in 2001 and is not required for 2002.

#### **A.3.2.6 Soil Excavation and Disposal**

Excavation and disposal of asbestos containing soils as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001 was completed in 2001 and is not required for 2002.

#### **A.3.2.7 Demolition and Dismantling of Structures**

Demolition and dismantling of structures as outlined in the Screening Facility, Final Removal Action Work Plan, August 14, 2001 was completed in 2001 and is not required for 2002.



#### **A.3.2.8 Septic System & Leach Fields**

Agricultural fill located within the boundary for the leaching areas of Dwelling No. 2 will be excavated within the limits shown on sheet C-14B of the site restoration plans and replaced with compacted structural fill. Once the agricultural fill is removed from the Dwelling No. 2 location and structural fill placed, a percolation test will be required at this location and results provided to the Lincoln County Board of Health.

Septic tanks will be constructed of 4,000 psi concrete, 1,500-gallon capacity with two-compartment wall as manufactured by Glacier Pre-Cast Concrete, Kalispell, MT or equal. The septic tanks will include a separate chamber for the future installation by the property owner of a sewage discharge pump. Construction and installation of septic tanks will meet all requirements of Circular DEQ4 Montana Standards for On-site Subsurface Sewage Treatment Systems, 2000 Edition. Elevations of the septic tanks need to be approved by the property owner prior to installation. Air monitoring and dust control procedures will need to be instituted during the septic tanks installation.

#### **A.3.2.9 Screening Plant Utilities**

Removal contractor will pressure test all new water lines. The existing well will be tested first for functionality. If the existing well is not damaged or it can be repaired to meet the water quality and quantity tests, it will then be considered for continued use. The water supply from the existing well may be stressed if used to serve both proposed dwellings and the frost-free faucet simultaneously. Adding 2-inch diameter piping to each dwelling as well as 100+ gallon expansion tanks may be required. Given the combined head losses and distances from the existing well, preliminary calculations indicate that the ¾ HP pump that was previously used at with the existing well, may need to be replaced by the property owner. A 2 HP pump may be required to serve all of the water demands proposed for this property. An additional well or two may be required to provide an increasingly conventional water supply system. This matter should be discussed before meeting with the property owner. If the existing well is deemed appropriate, the water line from the existing well will terminate within 6 feet of proposed building foundation, cap end water tight. Property owner will be responsible for final connections and shutoff valve to Dwelling No. 2. Underground electrical lines will be installed as shown on sheet E-1 and E-2 (please note that these drawings will need to be revised to connect the expansion tank and pump control vault and the existing well). No irrigation sprinklers will be installed by the Government; property owner stated that he would install sprinklers at a later date.

#### **A.3.2.10 Backfilling and Compaction**

Winter erosion control measures will be removed from the site prior to beginning restoration work. On the North Side, test pits will be dug to verify 3 feet of agricultural fill exists in all areas to receive topsoil and hydroseed, excluding leaching areas. If material does not meet specifications it will be removed and used off-site or on-site as appropriate. Three (3) feet of agricultural fill and six (6) inches of topsoil will be brought in to replace. Import and backfilling of agricultural fill operations will continue in 2002 until final grades are met.

Agricultural fill will be placed in 24-inch lifts and will not be compacted using vibratory compaction techniques. To the extent practical, vehicular traffic over fill material will be minimized during placement and grading of the agricultural fill material to avoid wheel compaction of the material to accommodate the property owner's request.

Subsoilers will be used to till the agricultural fill and existing soils on the North and South sides where compaction occurred. The tilling will be accomplished using a deep tillage subsoiler pulled by a tractor, with a penetration depth of 36 inches.

#### **A.3.2.11 Topsoil and Hydroseeding**

Six (6) inches of topsoil provided by the government will be placed above the 3 feet of agricultural fill (one 24-inch lift followed by one 12-inch lift) to the grades shown. Hydroseeding will be applied to the property in areas shown on the approved site restoration drawings. The rate of application and type of seed will be provided under the design for the Rainy Creek and Kootenai River bank restoration.

#### **A.3.2.12 River and Creek Bank Rip Rap Placement and Restoration**

Restoration activities along the Kootenai River bank will include finalizing rip rap placement along the riverbank, revegetating the riverbank, installing soil and timber stairways along the riverbank, and constructing and installing a fishing dock per property owner's request. Rainy Creek restoration will include the removal and replacement of rip rap material on the South Bank that does not meet specifications. Test pits will be installed along the sides of Rainy Creek to verify the keying of the rip rap. The length of the two-foot pedestrian foot bridges across Rainy Creek will be determined after the creek restoration design is finalized. The riverbank and creek banks will be revegetated based on a design provided by the government's riparian expert and approved by the property owners.

#### **A.3.2.13 Final Site Restoration**

Fencing and gates will be properly erected, and a final demobilization of the facilities will occur. A final topographic survey and property line survey will be conducted after restoration is complete. Any property line markers removed during contaminated soil excavation and site restoration will be replaced at the conclusion of the project.



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**Research and  
Special Programs  
Administration**

John A. Volpe  
National Transportation  
Systems Center

Kendall Square  
Cambridge, Massachusetts 02142

June 11, 2002

Melvin and Lerah Parker  
P.O. Box 609  
Libby, Montana 59923

**Subject: Response to Letter Re: Agricultural Soil on Parker Property**

Dear Mr. and Mrs. Parker,

This letter is written as a clarification in response to your letter to Courtney Zamora, dated June 3, 2002 (see attached). In the first part of your letter you state, "all material less than 3" sieve in size down to 1/2" in size will be accepted up to 30% by volume. All material that is less than 1/2" mesh will make up at least 70% of the remaining volume." This is the case for material previously placed on your property. This was verified through the test pits dug on June 1, 2002. CDM's geotechnical engineer, Harold Liendecker, and you agreed to the quantity of rock in the agricultural fill in each test pit sample. For each test pit, a 5 gallon bucket of excavated material was sieved through a 1/2" mesh screen on-site. Samples containing more than 30% material retained on the 1/2" screen were noted and the areas around these test pits will be removed during the 2002 construction season. Samples containing 30% or less material retained on the 1/2" screen were determined to be acceptable by Harold and you. Per your direction, no further analysis was conducted on these test pit samples to verify silt loam classification by USDA Classification, as stated in the second part of your letter.

Agricultural fill material to be brought in for the 2002 construction season will meet the requirements stated in both parts of your letter. New agricultural fill for 2002 will be analyzed by ASTM method D-422 to determine the distribution of particle sizes. Material meeting the government's specification for agricultural fill (20-40% Sand, 10-25% clay, 50-70% silt) and classified as a silt-loam by the USDA soils classification system will be used on-site to bring the site up to final grade.

Should you have any questions, please call me at (617) 494-2574.

Sincerely,

John McGuiggin, PE  
Project Manager

cc: EPA/Paul Peronard, OSC  
CDM/Peter Borowiec  
File/Parker Restoration

Attachment: (1) Letter

COURTNEY:

JUNE-3/02

MY UNDERSTANDING OF THE AGRICULTURE SOIL  
IS THAT IT IS

ALL MATERIAL LESS THAN 3" SIEVE IN SIZE DOWN  
TO 1/2" IN SIZE THAT WILL BE ACCEPTED UP TO  
30% BY VOLUME. ALL MATERIAL THAT IS LESS THAN  
1/2" MESH WILL MAKE UP AT LEAST 70% OF  
THE REMAINING VOLUME. THAT SOIL SIZE WHICH IS  
2.0 M.M. IN SIZE OR LESS AND IS CLASSIFIED BY  
THE U.S.D.A. STANDARDS AS 20-40% SAND,  
10-25% CLAY AND 50-70% SILT. AND CONSIDERED  
AS SILTY LOAM. ON THE U.S.D.A. CHART.

IF THIS IS NOT AS YOU UNDERSTAND IT  
PLEASE CALL ME BEFORE I LEAVE TODAY AT  
3:30 P.M.

THE PHONE NUMBER IN NORTH CAROLINA  
IS 252-223-6948 AT THE RESIDENCE OF  
TENA MATSON.

THANK YOU  
W. L. Parker